XXX.—*On the Diversity in the Estimate of the European* Ornis, *and its Causes.* By Dr. J. H. Blasius*.

It appears to me to be desirable that, from time to time, we should ascertain the point which we have attained by our joint endeavours. It is absolutely necessary that we should ascertain clearly what we are to regard as positively gained, and what we have to leave to the future as problems still to be solved. Our circumstances, our environments indicate to us as an important part of our endeavours the elucidation of European ornithology.

No land on the face of the earth has been more repeatedly examined than Europe. We often hear, and, indeed, we might justly suppose, that the ornithology of Europe is quite settled; but every one who possesses an accurate knowledge of the subject must declare this assertion to be a manifest error. In no branch of ornithology—neither in systematic division, nor in literary criticism, nor in the observation of modes of life, nor in oology—has complete agreement, certainty, or peace been arrived at. To refer to one only of these points, that of the systematic division and enumeration of species,—for nearly forty years, no single scientific investigation, perhaps, has led to such divergent results as this with regard to European ornithology.

We find enumerated in—

	In the year	Species.
Brehm, 'Lehrbuch'	1823	471
Bonaparte, 'List,' &c.	1838	503
Temminck, 'Manuel,' 2nd edit.	1840	499
Keyserling and Blasius, 'Wirbelthiere'	1840	484
Schlegel, 'Kritische Uebersicht'	1844	489
Thienemann, 'Rhea'	1846	470
Degland, 'Ornithologie'	1849	507
Bonaparte, 'Revue Critique'	1850	539
Brehm, 'Naumannia'	1855	950
and with the subspecies		1628
Brehm, 'Vogelfang'	1855	1030
and with the subspecies		1800
Bonaparte, 'Catalogue Parzudaki'	1856	581
De Selys-Longchamps, 'Revue de Zoologie'	1857	509
Keitel, 'Verzeichniss,' &c.	1857	501
Des Murs, 'Traité d'Oologie'	1860	536

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* This important paper is translated from the Report of the Thirteenth

This series of figures speaks for itself, but not much in favour of the healthy state of European ornithology. There must be something rotten in this "State of Denmark." A science which gathers such very different flowers from one and the same soil cannot twine itself a garland of them; they would be frail and perishable decorations, without a single evergreen leaf.

A variation from 470 to 1030, or even to 1800!—a fluctuation of double or quadruple!—such a result appears to me to be something more than a joke. Every unprejudiced and uninitiated person must with justice ask how this can be possible; he must see in the priests of the Ornis a repetition of the Roman Augurs who could not look at each other without laughing at their gods! It seems to me that we are standing on the brink of the bitterest earnest, and that wherever we wander must be in false paths or on bogs. It is our serious duty to seek the cause of the evil, in order that we may not expose ourselves in the pillory to an unprejudiced public opinion any longer than is necessary either as deliberate deceivers, or as unconscious night-walkers, or as delirious fever-patients.

Let us look at our question as objectively and with as little partisan-spirit as possible! The statistical criterion shows us, in the numbers above given, two well-marked and irreconcileable opposite statements:—one group of numbers varies between 470 and 581; the other between 950 and 1030. The numbers of each group differ amongst themselves in nearly the same proportion; but the second group is nearly double the first. It must be evident at once even to the most unlearned that the opposite statements of these different groups are founded upon quite different data, upon quite irreconcileable principles. On which side is the right? or, in case both are in error, which side comes nearest to the truth?

The majority of ornithologists is on the side of the first, or smaller group:—all against one! Even the arithmetical mean of all the statements, 578, is on the same side! The judgment of those who decide objective probabilities by numbers cannot be a matter of question.

Meeting of the German Ornithologists' Society held at Stuttgardt in 1860, of which we shall give further particulars in the next Number.—Ed.

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On the side of the majority stands, besides all other ornithologists, Brehm's 'Lehrbuch,' published in 1823; on the other side stands Brehm alone, in the 'Naumannia' and the 'Vogelfang' of the year 1855. So far as any conflict of principles is in question, therefore, we have to do with a struggle between the entire science of ornithology up to the present time, and the most recent views of Brehm. The contradictions depend essentially, although not entirely, upon this conflict of principles.

The previous estimate of the European Ornis falls into two series of very different values—the species regularly inhabiting Europe, and those accidentally visiting that continent. The species not regularly belonging to Europe require merely a sort of police-notice, or domiciliation—we have simply to do with the question whether we shall give a place in our books and catalogues to the exotic species which may wander into Europe, or pass them by unnoticed. If they be left unnoticed, the question as to the estimation of the European Ornis becomes greatly simplified.

If, as is almost universally the case, the stray immigrants are to be noticed, their acceptance depends simply on the proof of their voluntary appearance in Europe, without importation. Imported birds, or exotic birds escaped from confinement, have no right to a place in our Ornis. The occurrence of *Spiza ciris*, L., in England, of *Parra jacana*, L., in the south of France, of *Nycterodius violaceus*, L., in England, of *Plectropterus gambensis* in France, of *Erismatura ferruginea*, Eyton, in Belgium, of *Halieus sulcirostris*, Brdt., and of many birds commonly kept in aviaries, may remain unnoticed without the least objection.

The number of voluntary immigrants, the occurrence of which in Europe is positively ascertained, amounts at the present moment to a little over 100 species. It has become greater nearly every year, and may be expected to continue increasing.

These species are distributed as follows, according to their native countries and the various natural orders :—

	Asia.	N. Africa.	N. America	Totals.
Raptores	0	5	2	7
Clamatores	1	0	3	4
Oscines	20	8	10	38
Columbæ	1	0	1	2
Gallinæ	1	0	0	1
Grallæ	5	8	12	25
Natatores	4	10	16	30

Some few of these species occur both in the north-east of Africa and the south-west of Asia, or in the north of Asia as well as in North America, so as to render their origin not quite certain.

Besides these, nearly 70 other exotic species have been received into the European fauna by different ornithologists, without the least justification; these must be omitted in our summaries.

About 25 of them were introduced as European by Bonaparte and Brehm merely on supposition, on the ground of the possibility of their occurrence; as, for example,

Gyps rüppellii, *Br.*
Aquila brehmii, *Br.*
Cotyle cahirica, *Würt.*, *Br.*
Turdus libonyanus, *Br.*
Otocorys bicornis, *Br.*
Carduelis orientalis, *Br.*
Chrysomitris pistacina, *Bp.*
Corvus umbrinus, *Br.*
Podoces panderi, *Bp.*
Zenaida carolinensis, *Br.*
Ægialites indicus, *Br.*
Hypsibates leucocephalus, *Br.*
Totanus guttifer, *Bp.*
Rhynchæa variegata, *Br.*
Halieus africanus, *Br.*
Uria carbo, *Bp.*
Mormon corniculata, *Bp.*
&c.

Upon the arbitrary principle of such an augmentation of the European fauna there can only be one opinion—that it is not legitimate! Is not almost anything *possible*? Let us wait, therefore, until it has actually taken place.

A great many exotic species have been erroneously received into the fauna of Europe, either by mistaking one for another, or entirely without reason. Criticism has definitely decided upon most of them and excluded them, but we find them for the most part still carried on in the most recent catalogues, as if there were no doubt about their occurrence. Amongst these we reckon,—

Falco peregrinoïdes, *T.*
—— sparverius, *L.*
Haliaëtus leucocephalus, *L.*
Ulula nebulosa, *Forst.*
Caprimulgus atrovirens, *Laud.*
—— climacurus, *Vieill.*
—— virginicus, *Briss.*
Hirundo senegalensis, *L.* (capensis, *Gm.*).
Parus atricapillus, *Gm.*
—— bicolor, *L.*
Troglodytes fumigatus, *T.*
Uragus sibiricus, *Pall.*
Corvus dauricus, *Pall.*
—— ossifragus, *Wils.*
Peristera semitorquata, *Gm.*
—— lugens, *Rüpp.* (risoria, *L.*).
Eurynorhynchus pygmæus, *L.*
Ardea herodias, *L.*
Buphus russatus, *T.*
Pelecanus mitratus, *Licht.*
Dysporus melanurus, *T.* &c.

It would be a just requirement of the ornithological public from its writers, or of the latter from themselves, that they should only admit positively ascertained species into the fauna of Europe, and finally consign ascertained errors to oblivion. This certainly does not offend against any internal conviction, or against a principle carried out to its consequences. The question regards only a vacillation between a mere external scrupulous completeness in name, or simple, non-critical carelessness, and positive adherence to fact.

It is only when we remove the whole of the exotic species, or at least those which have been erroneously admitted, that we can see clearly how far the different numbers of the summary above given are caused by diversity of fundamental views, by mutually opposed principles or requirements.

If we deduct the whole of the exotic species observed occasionally in Europe, there remain in

Thienemann, ‘Rhea’	401	species
Keyserling and Blasius, ‘Wirbelth.’	424	,,
Schlegel, ‘Krit. Uebersicht’	430	,,
Brehm, ‘Lehrbuch’	450	,,
Bonaparte, ‘Revue Crit.’	463	,,
Des Murs, ‘Traité’	466	,,
Bonaparte, ‘Catalogue P.’	500	,,
Brehm, ‘Vogelfang’	940	,,
and with the subspecies	1700	,,

as regular inhabitants of Europe. There is no essential change in the proportions above given; the statements vary from double to quadruple the average number. Here also occurs again the same abrupt and irreconcileable opposition of the majority of ornithologists to Brehm's position since the year 1855 : between Thienemann and Bonaparte there is a difference of 100; between Thienemann and Brehm of 540 species. The gap between these numbers must have its origin in principles, or in a diversity of views as to the separation of species.

If we examine the group of smaller numbers, we find that it contains essentially four different sections:—

1. Thienemann, with 401 species as the minimum.
2. Keyserling, Blasius, Schlegel, and De Selys, with 424–430 species.
3. Bonaparte, 1850, and Des Murs, with 463–466 species.
4. Bonaparte, 1856, with 500 species.

Amongst the species cited by Thienemann there are but few that are open to doubt,—such, for example, as *Sitta uralensis*, Licht.; *Sylvia sarda*, Marm.; *Anthus cervinus*, Pall.; *Glareola melanoptera*, Nordm.; *Podiceps arcticus*, Boié; and *Uria hringvia*, Brünnich,—in respect of the determination of the species, and *Ixos obscurus*, T., and *Lanius tschagra*, Vieill., with regard to the domicile. In the union of the Crossbills he goes very sharply to work, but not entirely without reason. In other unions he is decidedly wrong,—for example, in that of *Circus cineraceus*, Mont., and *C. pallidus*, Sykes. Numerous new discoveries since the year 1846 would have brought his list pretty accurately to the position of those under No. 2. This position is exceeded by the lists under No. 3 by about 40 species, and by that under No. 4 by about 80 species.

After carefully comparing all known facts, I find that the European Ornis consists, in round numbers, of 425 indubitable species of birds breeding in Europe (*Brütvögeln*), besides 60 varieties or races, which are frequently regarded as species, and about 100 exotic species. These 60 varieties, which are somewhat increased in Bonaparte's Catalogue, form the still doubtful specific element in the European fauna, if we follow the majority of ornithologists. They constitute almost exactly the eighth part of the total valuation. By the application of rigorous principles the number may be still greatly reduced.

Up to the year 1820, and, with few exceptions, even up to the year 1840, ornithology, in its conception of species, was developed exactly in analogy with the rules followed in other branches of zoology. The spirit of Linné, Pallas, and Cuvier ruled the entire domain of zoology. As soon as ornithology hastened forward with more rapid strides, it began to emancipate itself from other branches of zoology, and struck, as regards the conception of species, into a totally different course. The majority of ornithologists of note troubled themselves but little, or not at all, with other departments of zoology; they found no check upon their efforts in the stricter conception of the other classes of animals; their conception of species became constantly more and more isolated and, in course of time, looser and less careful in comparison with the prevailing zoological procedure.

For a long time Brehm was the only ornithologist who followed this bolder conception as a matter of principle. Towards the close of the year 1840, Bonaparte also gradually acquired the same taste; but he never went so far as that he could have formed a bridge between Brehm and the other ornithologists. In his fundamental views he entirely belonged to the opposite school in ornithology, and vacillated only as to the signification of some local races differing in colour, but similar in form. Gloger, Schlegel, and Thienemann still endeavoured to maintain the old classical zoological point of view.

If we examine the ornithological species-question from this zoological point of view, the gap between the two extreme schools becomes still more distinctly marked. Of the above-mentioned 60 doubtful forms, which are regarded by most zoologists as varieties, by many ornithologists at different times as species, about 50 would decidedly have to be united with the allied forms. Scarcely ten of these forms would remain as still fluctuating zoologically. According to the views which have hitherto been followed practically by Schlegel, Gloger, and Thienemann, to which I may add my own, the European Ornis would consist of about 425 certain species, 10 doubtful forms, and 100 exotic immigrants.

On the other hand, Brehm, in his "Vogelfang," cites, besides these 420 certain species, 520 others, of which the boldest ornithologists of the opposite party mention 60 at the outside, and besides these again, nearly 1400 subspecies. The number of species not certainly well founded with Brehm is fifty times, and that of the subspecies one hundred and forty times, as great as with those ornithologists who form their opinions in accordance with strict zoological notions.

Reichenbach and Brehm assert that the notion of the species is subjective: whoever requires a more convincing proof, overleaps the bounds of discretion.

Strictly speaking, the only objectively distinct forms presented by nature are the individuals. All further conceptions are subjective views—separations on account of differences observed or supposed to be observed. These differences belong *objectively* to animals; their estimation and relative valuation is exclusively a *subjective* affair. It is a matter of subjective choice whether we separate the Ostrich-like birds from the other birds as a distinct class, or unite them with them; it is a matter of subjective choice whether we separate the Herons as an order from the other Grallæ, and the Ducks from the other Natatores, or place them together; it is a matter of subjective choice whether we leave the Linnean genera *Falco* and *Strix* in their original condition, or break them up into many genera, and so forth. Lastly, it is a matter of subjective choice whether we separate individuals as species, which only differ from each other by a different state of plumage or a different coloration,—e. g. *Haliaëtus leucoryphus*, Pall. (*unicolor*, Gray), and *H. macei*, Temm., or *Larus heinei*, Hom., and *L. canus*, L., or *Ægialites homeyeri*, Br., and *Æ. hiaticula*, L.; one of them may be converted into the other in time. It is a matter of subjective choice whether or no we separate *Charadrius pardela*, Pall., from *C. hypomelanus*, Pall. In the case of living animals we need only wait a few months to see how, in the same individual, the one bird becomes converted into the other. It is a matter of subjective choice to separate *Alauda semitorquata*, Br., from *A. tartarica*, Pall., as the one form agrees exactly with the female of the other. In the above-mentioned cases I believe it is possible to come to a perfectly concordant view, although at present this does not exist throughout. Nature presents conditions which may bring about a common conception; but she also presents objective differences, which in separate individuals have, in fact, caused the young, or the female, or the winter dress to be regarded as specifically distinct. In these cases coloration is less decisive than the force of the conditions of life and development; where the latter are not known, it would be well to depend rather on the form than on the colour. *Mergus merganser* has been met with paired with *Anas clangula*; it would be subjective and arbitrary, but possible, and therefore, from the subjective point of view, also justifiable, to regard the two as one species. In this case also we should have to depend rather on the form than on the isolated objective fact.

Whoever regards the notion of the species as subjective is empirically right; but whoever thereby means to deny to the idea of species any objective foundation, is certainly in error. The dictum "the species is subjective" has therefore truly no signification at all. Any one may with equal right assert the opposite.

The objective data for the practical application of the idea of species lie in the general nature of the animal—in the form, size, marking and coloration, in the manifestations of life, in the development and reproduction of the animal. We know that not a single one of these peculiarities in one and the same species is rigidly concluded at a single point,—we know that in all properties variations may occur in one and the same species. For the idea of the species, it is, in fact, requisite that concordance should occur within the limits of such vacillations, which cannot be established *à priori*; but that with respect to all other species, a sharply-defined boundary, free from all gradual transitions, must occur. When both these objective conditions are fulfilled, we are justified in ranging any totality of individuals under the same specific idea.

The objective specific conditions may be fulfilled in very different ways and in very different degrees. Whoever makes very small requirements, and judges from an isolated peculiarity which has acquired no significance in the totality of the organism (separating, for example, the young or the female from the old male, the small Sparrow-Hawk from the large one, the brown Screech-Owl from the grey, or the grey-capped House-Sparrow from the brown-headed one), is of course subjectively justified in making species; but his species possess a less degree of objective justification than those established in accordance with more rigorous requirements. The principle of the separation of species is in all cases essentially the same; in respect of its practical application, we can only hold different views as to the degree of requirement, and this diversity is purely subjective.

The abrupt gap between the two schools is considerably enlarged, if we differ also in the principle and not merely in the degree of requirement. The dominant zoology universally assumes that different species must be actually different in their properties—that is to say, separated by well-defined limits in their characters. This, however, is not theoretically the view of the freer unbridled ornithology. In this it stands as a theoretical principle that nature everywhere presents transitions between species, as between subspecies. With this therefore every kind of objective conception falls to the ground. The only means of comprehension that remains consists in the comparison of individuals lying before the observer. The ornithology which proceeds on the principle of allowing universal transition, and sets lax requirements on the species, runs the danger of becoming incapable of being checked by others, and thereby necessarily renouncing all further influence in favour of a deviation. It is throughout of a subjective nature, and therefore not communicable.

From this it follows, in my opinion, that it must remain without results, as, indeed, it has hitherto done, to dispute as to the boundaries of species in the two distinct ornithological schools. All that can be done towards an elucidation is to indicate the irreconcileable degree of the diversity in the two tendencies and to establish a synonymy for both views.

Both the digressing sects do well when they avoid all disputes; when they at the utmost confine themselves to ascertaining what objective matter of fact runs parallel to the two different subjective views. This is the only question on which unity can be attained on both sides, although not to the satisfaction of both parties.

All that the ornithologists with more rigid requirements can do in this direction for the advancement of their science is that they should come to an understanding among themselves as to the way in which the so-called local races, about fifty in number, had better be regarded,—that they should bring together the material which is still necessary to enable them to come to a final judgment upon about ten still uncertain forms,—and that they should subject any exotic immigrants to be added to the fauna to a strict criticism.

On these points it appears to me that a concordant judgment may be arrived at.

XXXI.—*Recent Ornithological Publications**.

1. English Publications.

Sir John Richardson's volume on the Polar Regions† contains a notice of the birds met with in Spitzbergen (p. 210), and a short chapter devoted to the Zoology of the Arctic Circle generally. "Excluding merely the points where the woods cross the Arctic Circle," says the author, p. 278, "the polar region presents a uniformity in its native birds in all meridians. All the birds that frequent the high latitudes are natives, and, though their stay at the breeding-places does not exceed three months, they are to be considered as merely visitors in the southern regions, which they traverse in going and coming during the remaining nine months of the year." This, we believe, is pretty nearly true, as far as it goes; but a really good and succinct account of Arctic Zoology is still a desideratum, and would form a very acceptable addition to our knowledge of geographical distribution.

We do not propose here to enter into the general merits of Mr. Du Chaillu's account of his travels in Equatorial Africa‡. That his work has produced much hostile criticism our readers are well aware. But no ornithologist, who is acquainted with the progress of his favourite science during the past few years,

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* Want of space has compelled us to defer the notice of several works until the next Number.—Ed.

† The Polar Regions. By Sir John Richardson. Edinburgh, 1861, 1 vol. 8vo.

‡ Explorations and Adventures in Equatorial Africa. By Paul B. Du Chaillu. London, 1861.